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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,687	12/31/2003	Ju Ho Kim	11037-164-999	2204

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EXAMINER	
SCHWARTZ, CHRISTOPHER P	
ART UNIT	**PAPER NUMBER**
3683	

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/750,687	KIM, JU HO	
	Examiner	Art Unit	
	Christopher P. Schwartz	3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

CHRISTOPHER P. SCHWARTZ
PRIMARY EXAMINER

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's response filed 12/9/04 has been received and considered. Claims 1,2,4-13 are pending. Claim 3 has been canceled. This action is in response to the amendment filed with the RCE on 12/9/04.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1,2,5-7,13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jolly et al. in view of Gordaninejad et al. ('018) and the Japanese publication to '189.

Regarding claims 1,2,13 as discussed previously, Jolly et al. discloses in the several embodiments, and in particular figure 6a, a shock absorber having a piston 26f, a magnetic field generating unit (32f, 32f', 32f'') comprising a plurality of ring shaped "unit magnets", as broadly claimed, mounted on an interior side of the cylinder 22f.

Jolly et al. Lacks showing the particular configuration of the ring shaped magnets and discussing what type of material the internal side of the cylinder is formed from. Note that Jolly shows magnetic field lines or the magnetic flux, having portions that are perpendicular to the travel path of the piston. Also, note that the change in rheology of

the fluid creates a force therein to counter the direction of movement of the piston, as per applicant's.

The reference to '018 in the description of figure 7, and in column 8, states that the cover/housing 1,16 can be formed using either ferrous or non-ferrous materials.

This reference also discloses at the bottom of col 8 that MRF fluid that passes through the piston (i.e. in the same direction of motion of the piston) is perpendicular to the magnetic field. Note that this reference can also use permanent magnets to generate the magnetic field.

The Japanese publication to '189 shows a magnetic field generating unit in figure 4 having a the poles oriented substantially to that claimed

One having ordinary skill in the art at the time of the invention would have found it obvious to have formed the cylinder of Jolly et al. from a "metallic material with relatively high electrical conductivity" dependent upon such well known factors as cost, material availability, weight and/or magnetic field characteristics desired. To have adapted or modified the piston and magnet arrangement of Jolly, such that the magnetic field generated is *substantially* perpendicular to a direction of motion of the piston (as it already appears to be in Jolly) is further suggested by the reference to Gordaninejad et al. ('018) and the Japanese publication to '189 and would have been obvious simply as an alternative magnetic ring arrangement dependent upon cost, availability of types of permanent magnets etc. Applicant lacks criticality in the specification for the claimed arrangement.

Regarding claim 5, in view of the modification above, the choice of copper would simply be an obvious choice of materials to the ordinary skilled worker in the art.

Regarding claims 6 and 7 although Jolly et al. lacks a specific showing of the spring arrangement claimed in the embodiment of figure 6a such an idea is taught generally in figure 12a and in '018 col. 8 lines 44+.

To have modified the embodiment of figure 6a to incorporate a spring arrangement, as generally taught by Jolly et al. in figure 12a or by '018, would have been obvious dependent upon the spring or damping characteristics desired from the device for a specific application.

3. Claim 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Jolly et al. as modified by Gordaninejad and JP '189, as applied to claim 6 above, and further in view of Lin et al.

Regarding claim 9 note the spring arrangement taught by Lin et al. It is known in the art to add springs to supplement or adjust the damping characteristics of the absorbers upon specific applications.

One having ordinary skill in the art at the time of the invention would have found it obvious to have provided the device of Jolly et al. with a spring arrangement between the piston and the gas spring, as generally suggested by Lin et al., dependent upon the spring characteristics desired from the device for a specific application.

4. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jolly et al., as modified by '018 and JP '189, as applied to claim 1 above, and further in view of Knapp.

Regarding claim 10 although Jolly et al, as modified, lacks a rotation restricting means, such idea is taught by Knapp. See column 8 beginning around line 42.

To maintain axial alignment of the piston of Jolly et al. one having ordinary skill in the art at the time of the invention would have found it obvious to have provided the piston/cylinder with a rotation restricting means, as taught by Knapp, dependent upon the specific application for the device.

Regarding claims 11 and 12 these limitations are simply an alternate equivalent to the arrangement taught by Jolly et al. as further modified by Knapp.

5. Claims 1,5-7,13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordaninejad et al. in view of JP '189.

Regarding claims 1,13 Gordaninejad et al. discloses in column 8 and in figure 7 all the features required except for the specifics of the metallic material from which the cylinder and/or piston is made. Note the possible various arrangement of permanent magnets discussed therein.

Gordaninejad et al. Lacks showing the particular configuration of the ring shaped magnets.

However, in light of the discussions in columns 6 and column 8, the ordinary skilled worker at the time the invention was made would have found it obvious to have made the cylinder or piston from a material with relatively high electrical conductivity dependent upon such well known factors as cost, weight and/or magnetic field characteristics desired. Further, it would have been obvious to one having ordinary skill in the art to have oriented the magnetic ring or electromagnetic coil arrangement to that

claimed simply as an alternative magnetic ring or electromagnetic coil arrangement dependent upon such well known engineering factors as cost, weight, power consumption, heat generation, availability of specific types of permanent magnets etc. Applicant lacks criticality in the specification for the claimed arrangement.

Please also refer to the discussion on line 20 of column 8 and the last paragraph of column 8 regarding the direction of the magnetic field.

Regarding claim 5 the choice of copper would simply be an obvious choice of materials to the ordinary skilled worker in the art dependent upon weight, cost or magnetic characteristics desired from the damper.

Regarding claims 6 and 7 in light of the discussion of column 8 lines 45+ to have used a spring in the manner claimed would have been obvious to the ordinary skilled worker in the art to supplement the damping effect dependent upon the particular application for the device or damping characteristics desired.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over '018, in view of JP '189, as applied to claim 1 above, and further in view of Lisenker.

Regarding claim 4 as discussed in col 6 '018, as modified, does not require the piston to be material specific for the device to function.

Lisenker states at the bottom of column 4 that the piston may be with copper elements at 32,42.

Dependent upon the magnetic field strength/characteristics desired one having ordinary skill in the art at the time of the invention would have found it obvious to have formed an exterior part of the piston of '018, of copper, as taught by Lisenker.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over '018 in view of JP '189, as applied to claim 6 above, and further in view of Lin et al.

Regarding claim 9 note the spring arrangement taught by Lin et al.

One having ordinary skill in the art at the time of the invention would have found it obvious to have provided the device of '018, as modified with a spring arrangement between the piston and the cylinder as generally suggested by Lin et al., dependent upon the spring characteristics desired from the device for a specific application.

8. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over '018 in view of JP '189, as applied to claim 1 above, and further in view of Knapp.

Regarding claim 10 although '018, as modified, lacks a rotation restricting means, such idea is taught by Knapp. See column 8 beginning around line 42.

To maintain axial alignment of the piston of '018 one having ordinary skill in the art at the time of the invention would have found it obvious to have provided the piston/cylinder of '018 with a rotation restricting means, as taught by Knapp, dependent upon the specific application for the device.

Regarding claims 11 and 12 these limitations are simply an alternate equivalent to the arrangement taught by '018 as modified by Knapp.

Allowable Subject Matter

9. Claim 8 is allowable over the prior art of record.

Response to Arguments

10. Applicant's arguments filed 12/9/04 have been fully considered but they are moot in view of the new grounds of rejection.

Conclusion

11. The prior art of record has been cited for showing other types of MR dampers having magnetic fields arranged perpendicular to the direction of travel of the piston—as is notoriously well known in the art.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Schwartz whose telephone number is 703-308-0576. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Bucci can be reached on 703-308-3668. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cps
12/9/04

CHRISTOPHER P. SCHWARTZ
PRIMARY EXAMINER